

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-7 and 11-12 are pending in the present application, Claims 1-7 having been amended, Claims 11-12 having been added, and Claims 8-10 having been canceled without prejudice or disclaimer. Support for the present amendment is believed to be self-evident from the originally filed specification. Moreover, the amendments to Claims 1-7 address matters of form and do not raise new issues. Applicant respectfully submits that no new matter is added.

In the outstanding Office Action, Claims 4-7 were objected to for being improper multiple dependent claims; Claims 1 and 2 were rejected under 35 U.S.C. §103(a) as unpatentable over Ruchhoeft, "Patterning curved surfaces: Template generation by ion beam proximity lithography and relief transfer by step and flash imprint lithography" (hereinafter Ruchhoeft) in view of Yuasa (U.S. Patent Publication No. 2003/0104287); Claim 3 was rejected under 35 U.S.C. §103(a) as unpatentable over Ruchhoeft in view of Yuasa, and further in view of Yuki (U.S. Patent Publication No. 2003/0054601); and Claims 8-10 were rejected under 35 U.S.C. §103(a) as unpatentable over Klosner (U.S. Patent No. 6,416,908) in view of Ruchhoeft.

With respect to the objection to Claims 4-7, these claims are amended to remove the improper multiple dependencies. Accordingly, this ground of objection is overcome and these claims are in condition for examination.

With respect to the rejection of Claim 1 as unpatentable over Ruchhoeft and Yuasa, Applicant respectfully traverses this ground of rejection. Claim 1 recites,

A process for preparing a lithographic mask,
comprising:

making patterns on a plane mask, the plane mask having an SOI structure, comprising a layer of semiconductor material, a buried layer of insulant and a substrate; and

transferring the patterns and the plane mask to a curved support that includes at least one point of non-nil curvature.

Ruchhoeft and Yuasa, taken alone or in proper combination, do not disclose or suggest every element of Claim 1.

Claim 1 states “making patterns on a plane mask.” Page 3 of the Office Action takes the position that Ruchhoeft describes forming a pattern into a quartz substrate. However, the quartz substrate in Ruchhoeft is curved.¹ Ruchhoeft describes patterning a curved surface, and not a plane mask.² Thus, Ruchhoeft does not disclose the claimed “making patterns on a plane mask.”

The claimed invention does not make patterns directly onto a curved structure. With respect to making patterns directly onto a curved structure, the present specification notes:

Making small patterns directly onto a "curved" mask surface is difficult to achieve; in particular, in an electron masker for lithography, these difficulties are related to problems of depth of field: the electron beam does not retain the same dimension as you move over its length.

According to the example above, the litho-etching stage is therefore initially carried out on a plane mask....³

Thus, it is improper for the Office to equate the patterning of a curved surface in Ruchhoeft with the claimed “making patterns on a plane mask.”

Moreover, the purpose of Ruchhoeft is to *directly* pattern a *curved surface*. The invention defined by Claim 1, on the other hand, provides a novel method of forming patterns

¹ Ruchhoeft, page 1966, paragraph 1, and Figs. 1a-1c.

² Ruchhoeft, title, abstract, and page 2965, paragraph 1.

³ Specification, page 6, lines 13-21.

on a ***plane mask***, and then transferring the patterns and the mask to a curved support. The invention defined by Claim 1 avoids the difficulty of directly etching a curved surface.

Moreover, MPEP § 2143.01(VI) states “the proposed modification cannot change the principle of operation of a reference.” “If the proposed modification or combination of prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.”⁴

Thus, it is not obvious to modify Ruchhoeft to not form patterns directly on a curved surface. Such a modification would require a substantial reconstruction and design of the elements shown in Ruchhoeft as well as change in the basic principle (i.e, directly forming patterns into a curved surface) under which Ruchhoeft was designed to operate.⁵

Furthermore, since Ruchhoeft does not describe making patterns on a plane mask, there is no description of transferring the patterns and the plane mask to a curved support.

Moreover, Yuasa does not cure the above-noted deficiencies in Ruchhoeft. As noted above, a proper combination of Ruchhoeft and Yuasa cannot change the principle of operation of Ruchhoeft. Thus, a proper combination of Ruchhoeft and Yuasa does not disclose or suggest the claimed:

making patterns on a plane mask, the plane mask having an SOI structure, comprising a layer of semiconductor material, a buried layer of insulant and a substrate; and

transferring the patterns and the plane mask to a curved support that includes at least one point of non-nil curvature.

In view of the above-noted distinctions, Applicant respectfully submits that Claim 1 (and any claims dependent thereon) patentably distinguish over Ruchhoeft and Yuasa, taken alone or in proper combination.

⁴ MPEP § 2143.01(VI).

⁵ See, also, *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

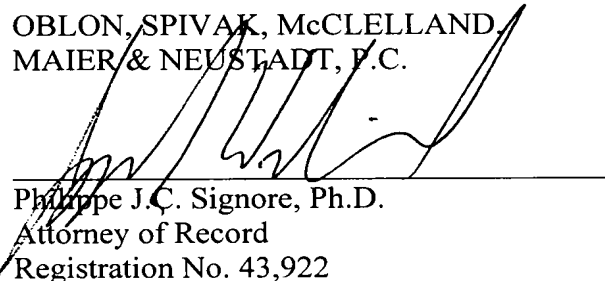
The rejection of Claims 8-10 as obvious over Klosner and Ruchhoeft is moot in view of the cancelation of these claims.

Addressing each of the further rejections, each of the further rejections is also traversed by the present response as no teachings in any of the further cited references to Yuki can overcome the above-noted deficiencies of Ruchhoeft and Yuasa. Accordingly, it is respectfully requested that those rejections be withdrawn for similar reasons as discussed above.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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